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Policy

The U.S. Navy Medical News Letter is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date items of official and professional interest relative to medicine, dentistry, and allied sciences. The amount of information used is only that necessary to inform adequately officers of the Medical Department of the existence and source of such information. The items used are neither intended to be nor susceptible to use by any officer as a substitute for any item or article in its original form. All readers of the News Letter are urged to obtain the original of those items of particular interest to the individual.

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Notice

Due to the critical shortage of medical officers, the Chief, Bureau of Medicine and Surgery, has recommended, and the Chief of Naval Personnel has concurred, that Reserve Medical Officers now on active duty who desire to submit requests for extension of active duty at their present stations for a period of three months or more will be given favorable consideration. BuPers Instruction 1926.1B applies.

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Applications Desired for Graduate Medical Training

1. Applications are desired for residency training in all specialties. Eligible are Regular officers and Reserves who have completed their Selective Service obligations, or will accept a Regular Navy commission. Hospitals approved for residency training are: U.S. Naval Hospitals, Bethesda, Md.; Chelsea, Mass.; Great Lakes, Ill.; Oakland, Calif.; San Diego, Calif.; Philadelphia, Penn.; Portsmouth, Va.; and St. Albans, N. Y.
2. Letters of application should be addressed to the Chief of the Bureau of Medicine and Surgery via official channels, and should contain an adequate service agreement in accordance with BuMed Instruction 1520.7 of 4 August 1954.
3. The following are excerpts from a letter sent to all Navy Interns by the Surgeon General:

"Interns who will remain on active duty under the provisions of the Universal Military Training and Service Act, as amended, will be eligible for consideration for assignment to residency training duty upon completion of Selective Service military requirements, or immediately upon acceptance of a Regular Navy commission. Regular officers may fulfill their Selective Service requirements concurrently with the period of obligated time required after completion of training. As you may be aware, Navy Interns are eligible to make application for transfer to the Regular Navy after completion of six months of internship. In this regard, those officers transferring to the Regular Service should make application for a commission not later than the end of January 1956. The administrative procedures needed to process an application are somewhat time consuming, and early application will insure completion of these procedures prior to termination of internship.

Those of you who have completed your Selective Service active duty may apply for residency training to commence upon termination of internship. While all applications for residency training should be for one year at a time, it is expected that those officers whose progress is satisfactory will be permitted to complete the required formal training without interruption. Every effort will be made to accomplish this insofar as Service needs will permit. It is expected that vacancies will be available in all specialties by 1 July 1956, and application for training may be made at once. For training received in a naval hospital, you are required to serve on active duty one year for each year of training received. Training in civilian institutions requires a two year obligated service agreement for the first year of training received, and one year of obligated service for each successive year. During Navy sponsored civilian training, medical officers continue to draw the full pay and allowances of their rank with, of course, the cost of tuition and fees being borne by the Navy Department." (ProfDiv, BuMed)

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MSTS Medical Program

To carry out the full program of treatment of the sick as well as preventive medicine is more than a full-time operation. The larger MSTS ships carrying up to 3000 passengers are in many respects like a township of that number of persons with complete facilities for berthing, feeding, recreation, and medical treatment. But the difficulties in moving a population of 3000 people under confining conditions—people who have been

exposed to a multitude of infections—presents a formidable health challenge to MSTS medical personnel.

Hospital areas include treatment rooms, a pharmacy, laboratory, x-ray and operating room, and sick wards. Most of the larger passenger ships have 35-bed hospital sections, but some such as USNS Gen. Nelson M. Walker boast a 98-bed unit. Three transports (Barrett, Upshur, and Geiger) are designed with two complete hospital areas each, one serving troops and the other treating cabin passengers. The facilities are located one above the other with a connecting ladder for use of the medical complement.

The feature which distinguishes MSTS medical activity from fleet medical procedure is that MSTS medicine is designed to minister to the health of passengers and crews under transportation conditions, while fleet medicine primarily functions to take care of Navy crews during normal shipboard life and in combat. With the transportation of dependents and children, the medical aspect of Navy ships is changed materially. Those used to the medical areas in combatant ships find the presence of whooping cough vaccine, measles serum, and disposable diapers out of place in an afloat sick bay.

Dependent-carrying transports have adapted their medical program for the care of women and children. There are complete facilities for the preparation of the various formulas required by the younger travelers being transported by MSTS.

The MSTS medical program falls into three broad categories: USNS dependent-carrying transports, austerity troopers, and cargo ships. Personnel assigned to a dependent-carrying ship's medical department include a medical officer, sometimes an assistant, a Navy nurse, two hospital corpsmen (women), and some half-dozen hospital corpsmen. The austerity troopers have similar personnel assignments, but with all male complements in the medical departments.

International Committee of European Migration immigrants require a special afloat medical personnel organization. The assignments call for a Navy doctor and a chief hospital corpsman, assisted by civilian nurses and orderlies. The medical department also can be augmented by passengers who have medical training to work with the medical department.

The cargo ships (in-service—USNS—civil service-manned) do not carry Navy medical personnel. The master and all licensed officers must demonstrate their knowledge and proficiency in first aid to the Coast Guard as part of their license examination requirements. MSTS provides a complete and well-stocked medicine chest under the custody of the master. When an emergency arises that requires services beyond his capabilities, the master can message for assistance. Many times, MSTS passenger ships have gone to the medical aid of crew personnel in USNS cargo ships.

Just as often, the ships have been diverted to assist ill or injured crew personnel in U. S. commercial and foreign flag ships.

The medical departments of MSTs in-service passenger ships do not carry dental personnel although the medical officer can handle dental emergencies. Dentists traveling as passengers may be assigned to the medical department by the commanding officer of the military department.

In conducting the afloat medical program, activities are usually divided according to the day-to-day treatment of the sick, preparation for emergencies, and a vigorous preventive medicine effort.

Sick call is conducted in very much the same manner as in a general practicing doctor's office ashore. There is a receptionist, a nurse or assistant, and the doctor.

Routine ailments generally consist of respiratory infections such as colds or the inevitable seasickness. Perhaps psychologically, seasickness is more prevalent on the outbound trip than during the return voyage. The emotional upset upon leaving home, the confined quarters, and the uncertainty of foreign duty, all contribute to motion sickness.

The medical department also gives annual physical examinations to the crew and special examinations to food handlers and hazardous occupation employees, conducts first-aid training classes, and provides immunizations and inoculations to the crew. Passengers, with few exceptions, are given immunizations by their shipper services prior to embarkation. If passenger inoculations are required while the ship is under way, the medical department administers them.

Prior to embarkation, the ship's doctor checks the presail list to determine if any passengers require special medical care. Normally, infirm travelers are accompanied by medical personnel provided by the shipper service.

Although sick call and routine health care of the passengers is not much different from the activity of a general practitioner's office ashore, the second phase of the afloat medical program, "being ready for any emergency," makes the ship's medical area more like an emergency room in a hospital than a doctor's office. Because there are an unavoidable number of hazards encountered in transportation, the sick bay must be ever-ready to treat any emergency from broken bones to appendectomies.

There have been cases of polio that required an air drop of an iron lung, unusual Far Eastern diseases, unexpected births, and deaths, complications requiring a varied knowledge of surgery, special medical problems experienced in the Arctic operation, and tremendous workloads imposed by mass passenger movements such as the Passage to Freedom which resulted in a commendation to the participating medical units.

The afloat medical departments classify sick calls and emergencies as routine, with the real watchword being preventive medicine. Their

dynamic program of preventing disease, epidemics, and catastrophies is one of the finest anywhere. The fact that MSTS ships have had no unusual mass passenger infections or contagions is a tribute to the effectiveness of the preventive medicine theme carried throughout all MSTS medical departments.

The medical officer of the military department makes a daily sanitary inspection to insure the highest possible health standard for personnel in the ship. He also examines food service personnel and conducts an active training program for food handlers.

Supplementing the medical officer's inspections, a roving corps of sanitation technicians periodically take trips in each MSTS passenger ship to give instruction in modern and safe food-handling practices. These much-traveled instructors, usually chief hospital corpsmen, are specially trained in sanitation procedures. Assigned for one round trip, they have the assignment of bringing the ship's sanitation practices up to the highest possible standards. Working with training aids and the benefit of the vast experience which MSTS has accumulated in food handling, these technicians develop programs that continue long after they have left the ship.

Afloat medical departments have made many contributions to the overall advancement of military and civilian medicine. Cooperating with other governmental agencies, studies have been conducted in MSTS ships in the use of advanced antimalarial drugs, seasickness preventives, and other long-range research problems.

One ship, the USNS Gen. Maurice Rose, was specially adapted for the transportation of three adult respiratory polio patients from Bremerhaven to New York. During the voyage, the iron lungs twice failed but were repaired quickly enough so that the patients were not affected. When the ship arrived in New York, all three patients—two women dependents and an Army officer—were found to be in better physical condition than when they embarked.

The sea voyage of the American military men freed from the Korean prisoner-of-war camps offered another example of passengers who debarked in much better health than when they started the trip. Special foods to compensate for their long confinement and under-nourished state were provided to the survivors of the North Korean camps.

The medical service within MSTS is justly proud of past accomplishments. Conducting routine sick call and handling any emergency, they continue their role in preventive medicine and make MSTS ships one of the healthiest locales ashore or afloat. (MSTS Magazine, VI: 3-6, 22, January 1956)

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Cancer-Cell Seeding of Operative Wounds

At present, the cure of cancer depends upon the complete destruction or removal of all cancer tissue from the body. This can be accomplished only by complete surgical removal, destruction by ionizing radiation, or chemical cautery. Chemotherapy, as well as the multiple forms of endocrine control, seems to be a purely palliative means of controlling cancer at present. These methods of therapy, whether they be for palliation or cure, continue to be the only effective ones. It is, therefore, important to discover why present-day methods of treatment fail. One cause of failure is the seeding of operative wounds at the time of definitive surgery.

The finding of clumps of tumor cells in operative wounds, on instruments, in wash water, on surgeon's gloves, et cetera, is not a new observation. For a long time, pathologists have been able to demonstrate cancer cells on instruments, along aspiration biopsy tracts, and in operative wounds away from the primary site of the tumor. The present study was undertaken to demonstrate that malignant tumor tissue may be found in washings from operative wounds following en bloc surgical removal of cancer.

Just before the closure of the skin flaps following surgical removal of a primary cancer and its lymph-node metastases, in cases of primary operable but advanced head and neck, breast, or pelvic cancer, the wound created by such a surgical procedure is thoroughly washed with sterile physiologic-saline solution, using a fine spray. The washings are collected in a glass container and mixed as quickly as possible with a fixative of 70 or 95% ethyl alcohol. The washings are then centrifuged at 2500 r.p.m. for 10 minutes. Part of the sediment is covered with 10% formalin, and the button of fixed sediment is embedded in paraffin and sectioned in the routine manner for tissue sections. Another part of the sediment is smeared directly on clean glass slides, and these slides are immersed in a solution of equal parts of 95% ethyl alcohol and ethyl ether. The slides are allowed to remain in the fixative for 30 minutes. While they are still wet, they are stained by any routine nuclear and cytoplasmic stain. Slides to be saved for special staining procedures may be kept in alcohol and ether fixative indefinitely. The Papanicolaou staining technique is the standard stain used. After the staining is completed, slides are promptly mounted, using a permanent type of seal. Routinely, these slides are screened by technicians trained to interpret exfoliative cytologic material, and cells or groups of cells to be studied by the pathologist are marked by the technician.

Wound washings from 36 cases of locally operable cancer at various sites were studied. In 10 instances, there was definite evidence of tumor tissue in the wound washings and in 5 instances the wound washings were

considered to contain cells or groups of cells of a suspicious nature but not definitely malignant. In 22 cases, the wound washings were considered to show no evidence of residual tumor.

In the short time since this study was undertaken, two of the cases in which the wound washings were positive have already developed recurring tumor in the operative site. In an additional two cases, in which no definite evidence of cancer cells was found in the wound washings, local recurrences of the tumor have developed. Finding clumps of tumor cells in 27% of this small series of cases certainly makes one suspect that this figure represents a minimum number of cases that could be expected to demonstrate local recurrence of tumors. It is reasonable to believe that in a number of cases the tumor cells might be free in the wound in such minute quantity that the chance of demonstrating them would be quite small. It should also be remembered that not all tumor cells contaminating a wound will grow, so that not every case with a positive washing will develop recurrences.

The identification of malignant cells in the wound washings did not present too difficult a problem. Most of the washings examined contained small fragments of tumor tissue which could be readily identified. Occasionally, a washing contained rather large fragments of tumor tissue, as in the case of one of the pelvic washings after hysterectomy.

In all instances, cells or clumps of cells seen in specimens of wound washings were compared with tissue biopsies from the surgical specimen. In all the washings considered positive, the tumor cells identified corresponded in morphologic characteristics to tumor cells seen in the tissue sections. In one case of adenocystic carcinoma of the minor salivary gland, in which there was a mixture of glandular tumor tissue and more solid squamous-like tumor, both types of tumor tissue were identified in the washings from the surgical wounds.

After the experience of examining numerous wound washings (both negative and positive) for tumor cells, it is now considered that in most instances in which tumor remains in the surgical wound or has been carried into the wound, these cells can be identified if washed out. Experience to date also seems to indicate that when tumor fragments are identified in wound washings, there is a strong possibility of local recurrence of the tumor in the operative site. The number of tumor clumps present in the operative wound may be reduced by gentle, nontraumatic surgery, the use of multiple instruments, and by obtaining an adequate margin from all limits of the tumor at the time of surgery. When all of these practices are observed, however, therapy in a significant number of cancer cases will fail because of the continued presence of tumor cells in the operative wounds. The trauma necessary to remove a tumor from the operative area, along with the necessary transection of lymphatic and blood vessels,

will allow the ever-present tumor emboli to break off and be extruded into the operative wound. Studies are under way to develop means of destroying the tumor tissue which may be present in an operative wound. Effective local chemotherapy of cancer can best be accomplished at the time of the primary surgical removal of the cancerous tissue. If and when an effective chemotherapeutic agent is discovered which can selectively destroy cancer cells that either become embedded in the wound or break off and are free in the intact blood of lymph channels, effective therapy of cancer will be available. (Smith, R.R., Hilberg, A.W., Cancer-Cell Seeding of Operative Wounds: J. Nat. Cancer Inst., 16: 645-651, December 1955)

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Surgery for Peptic Ulcer

Who should have an operation for peptic ulcer? If the operation were better, it might be advocated for most people with peptic ulcers because medical treatment of the disease is not satisfactory. Over 50% of peptic ulcer patients who are treated medically have a poor result, and the mortality rate with such treatment over a period of years is about 2%. But surgery is not yet quite good enough to advocate for the majority of patients with ulcer. Instead, its use is limited to those with certain indications. The most commonly cited indications for surgery of peptic ulcer are obstruction, hemorrhage, perforation, intractable pain, and a gastric ulcer which does not heal promptly.

In the author's experience, intractable pain has been the most common indication for surgery. This is usually not a persistent, irremediable pain, but recurrent pain that comes unless a diet is followed carefully and indefinitely. Usually, this indication is found in the patient who has had ulcer for many years and who finally decides he would like to get rid of it, even if it means having an operation. The average duration of the disease in the people operated on by the author has been about 12 years.

The indications for surgery especially considered in this article are perforation and hemorrhage. Of 129 patients who died due to peptic ulcer in Minnesota during 1952, 28% died of perforation and 46% died of hemorrhage.

Perforation is a fairly common complication in peptic ulcer. Of the 893 patients with peptic ulcer on whom gastric resection was done between 1940 and 1949, 117 had had a previous perforation. The diagnosis of perforation is usually not difficult but in a few cases, especially in old persons, it can be quite confusing. In these, particularly, the pneumoperitoneum seen on x-ray examination may be extremely helpful.

Once the diagnosis is made, however, there is considerable disagreement about the type of treatment that should be used. Simple closure, gastric resection, and nonoperative management are all currently recommended. Simple closure by the technique of Roscoe Graham is probably the most widely employed treatment. With it, the mortality rate is less than 10% and in some special groups it has fallen to 1 or 2%.

Gastric resection for perforated ulcer has recently been advocated by a number of authorities in this country and abroad. It is recommended principally because a fair percentage of people who have perforations will continue to have ulcer trouble; in fact, as high as 30% of them will require gastric resection in time, so advocates of an immediate gastric resection believe that the definitive operation might as well be done at once. If primary gastric resection is to be used in any cases with perforation, perhaps the best cases are patients with gastric ulcer, concomitant hemorrhage, or a long history of ulcer, or those in which simple closure might result in obstruction. Certainly, gastric resection is the best course for a perforated gastric ulcer because these ulcers are frequently malignant and hence a simple closure may not lead to healing of the perforation.

If nonoperative management is to be used in some but not all cases of perforation, the following may be reasonable indications: old and probably sealed perforation, the presence of serious associated disease, and situations where good surgery is not available.

Hemorrhage is still the biggest cause of death in peptic ulcer. In cases of severe hemorrhage, medical treatment alone may not suffice; some patients continue to bleed and may die if surgery is not used. In those patients who continue to bleed more than two or three days, the mortality rate is about 50% with medical management, while with surgery it falls to around 20%. Therefore, surgery is indicated for the patient with continued bleeding. But surgical procedures in such cases have often been performed too late, and so there has been considerable interest in trying to set up good criteria for earlier surgery in some patients with hemorrhage. Most surgeons who talk on the subject think that hemorrhaging patients should be in the hands of a surgeon and that the surgeon should be ready to operate if the patient continues to bleed longer than 24 or 48 hours, but some surgeons employ immediate surgery for every patient with massive hemorrhage.

The author usually passes a nasal tube and drips skim milk continuously if the bleeding has not been sufficient to lower the blood pressure to shock levels. If the patient's blood pressure has fallen, he operates.

More complex criteria have been set up. If the ulcer is known to be a gastric ulcer, surgery is strongly indicated; if the patient is over 50 years of age, surgery should be employed early; and if bleeding continues more than 48 hours, gastric resection probably should be done. Finally, if perforation and hemorrhage occur together, gastric resection is indicated.

A completely satisfactory operation for peptic ulcer may not have been developed as yet, but even the operations which are commonly used are good enough to greatly benefit most patients who need surgery. Many people with chronic, recurring peptic ulcer need operation, and the need can be recognized without first requiring a patient to live with his ulcer for 10 to 20 years longer. (Lewis, F.J., Surgery for Peptic Ulcer: Postgrad. Med., 18: 486-489, December 1955)

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Aortic Dissection

The clinical picture resulting from aortic dissection is extremely and characteristically protean, and such wide variety should be expected in view of the varied parts of the aorta that may be involved and the varied tissues that may bear the brunt of the secondary trauma either through direct destruction or ischemia. The clinical picture varies with time, and sometimes distinct phases are recognized, that is, phase of onset, phase of progression, phase of complications, and phase of death, or of sequelae. However, the whole process in all its phases may be over in a matter of moments, and the lesion is the cause of death in a considerable proportion of coroners' cases of sudden death. As a clinical problem, however, there is characteristically the history of severe unrelenting pain, which "marches" from one region to another, particularly from thorax to back, to abdomen, to extremities. Pain may occur in the face, ear, or neck before it is felt elsewhere. Pain may be absent, particularly when cerebral arterial insufficiency has occurred early in the attack.

The onset is not infrequently associated with syncope or shock. Characteristically, however, when the patient is admitted, the blood pressure may be found to be very high—pressures of 250 mm. of Hg systolic and 150 diastolic not being unusual—despite the fact that he may be cold and sweaty and have a feeble pulse. One may hear a double bruit at the aortic area, and this may be a transient or, more often, a persistent phenomenon. Arterial pulsations may or may not be unequal in arteries of the extremities. Neurologic conditions, particularly paraplegia or hemiplegia, may be the main features, or abdominal symptoms may be predominant with pain, distention, and urge to defecation. Acute pancreatitis or mesenteric thrombosis may be suspected. Usually, however, myocardial infarction is the condition most often suspected in problem cases; it is particularly logical to suspect myocardial infarction when the patient previously has had anginal pain or even myocardial infarction and then experiences a new attack of severe thoracic pain which often is the presenting complaint in aortic dissection.

Hoarseness has been known to occur; assumedly, it is related to paralysis of the left vocal cord through involvement of the left recurrent laryngeal nerve. Rarely, Horner's syndrome also may be seen.

Fever and leukocytosis may occur early. If external bleeding is occurring, progressive anemia may be noted. On rare occasions, there may be ecchymosis of the upper part of the thorax and lower part of the neck.

If it is possible to obtain a clear history of severe pain that migrates according to progressive dissection of the aortic length, and to observe the patient to have an accession to a severe hypertension, and to have inequality of the pulses in the peripheral vessels, then it is proper to make the diagnosis of aortic dissection. Further corroboration may come from an electrocardiogram which may show either a normal condition or evidence only of left ventricular hypertrophy, and from a roentgenogram which shows widening of the superior mediastinal shadow of definite dilatation of the aorta and perhaps fluid (blood) in the left pleural cavity. In such a case the lesion would be easily recognized, but in other cases in the acute phases of the disease the patient may at the onset present hemiplegia or paraplegia, manifestations of an acute abdominal catastrophe, or evidence of renal insufficiency in the form of acute oliguria.

In standard texts, treatment has often been dismissed with a sentence or so to the effect that the patient should be kept at rest and made comfortable with narcotics. For those patients who recover from the initial onslaught of the dissection, it is believed rational to treat them with the ganglion-blocking antihypertensive agents; but the author and his colleagues have done this with indifferent success. Anticoagulants are believed to be contraindicated because of the danger of facilitating any leak that may be occurring at the site of an almost-accomplished external rupture; it is doubtful if they would have any influence on progression of the dissection per se.

Surgical relief of an ischemic limb by creation of a re-entry opening in the dissected femoral artery was reported by Gurin and associates. Apparently, the first to make a frontal attack on the lesion itself, according to Paulin and James, was Osler Abbott, who wrapped the area of involved aorta with cellophane. The two patients who were operated upon are known to have lived more than two years but have been lost to follow-up at the present time. Abbott expresses no convictions concerning the established worth of the procedure of cellophane wrapping and thinks that perhaps, ideally, early surgical treatment with replacement by graft of a limited aortic dissection might be carried out in selected cases. He also feels that there is a major value in using a Blalock type everting suture for anastomosis in aortas prone to dissection. DeBailey has had successful results in four of six patients operated upon by carrying out a type of plastic repair

on the aorta whereby the aorta is transected, the distal split rejoined, and the aorta reconstructed. The ultimate results will need further survey. The problem will arise as to whether exploration should be performed as an emergency following the tentative diagnosis when the patient is first seen by the physician, or whether it is only for the chronic form of the disease that surgical measures should be recommended. Emergency surgical repair was carried out in one of the cases reported by De Bakey. The patient had a murmur of aortic insufficiency, and death was attributable to hemopericardium. It seems likely at this time that the early appearance of cerebral infarction or severe aortic insufficiency, signifying both the proximal location of the affected portion of the aorta and the limitations of surgical salvage, would be relative contraindication to emergency surgical efforts. A mild optimism may be entertained concerning this avenue of therapeutic endeavor and this view is apparently shared by Baer who recently reviewed the problem. (Burchell, H. B., Aortic Dissection (Dissecting Hematoma; Dissecting Aneurysm of the Aorta): Circulation, XII: 1072-1078, December 1955)

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Urinary Diversion

The problem of urinary diversion has assumed increasing importance during the past few years. With the development of adequate bowel preparation and the advent of chemotherapeutic agents for the control of upper urinary tract infection, the heretofore prohibitive operative mortality and morbidity following urinary diversion have been reduced to such an extent that the utilization of this procedure need no longer be looked upon as condemning the patient to a life of invalidism followed by early death.

The commoner conditions for which urinary diversion is employed are: (1) extrophy of the urinary bladder and epispadias; (2) inoperable vesicovaginal fistula; (3) intractable interstitial cystitis; (4) advanced vesical tuberculosis when all other forms of treatment fail; (5) crushing injuries to the pelvis with extensive destruction of the male urethra; (6) advanced destructive disease of the urethra, "watering-pot perineum"; (7) extensive scarring of pelvic ureters due to prior surgery or radiation treatment; (8) cystectomy for carcinoma of the urinary bladder or urethra, and (9) pelvic evisceration for extensive carcinoma of pelvic organs (excluding carcinoma of the prostate and advanced bladder carcinoma).

The following general types of diversion are discussed: (1) uretero-cutaneous anastomosis, (2) the Boyce-Vest procedure for extrophy of the bladder, (3) uretero-sigmoidostomy with wet colostomy, (4) establishment of a reservoir utilizing the cecum and terminal ileum,

(5) transplantation of ureters into the isolated rectal ampulla, (6) uretero-sigmoidostomy with rectal pouch and colostomy above, (7) ileal segment bladder substitution, and (8) ureterosigmoidostomy in the intact colon.

From a review of all recent literature on urinary diversion and from the author's own experience, several conclusions may be drawn. All patients with urinary diversion, regardless of the type used, must have intelligent careful follow-up attention at regular intervals for the rest of their lives. This is the field in which surgeons have been most at fault. All too frequently, after the patient has been operated on and has gone home, the surgeon thinks that he is cured and that no further observation on his part is necessary. In addition, unless the entire problem is carefully discussed with the patient, it is very difficult for him to realize the value of regular periodic examination. Continued supervision will help to avoid many serious late complications. Early hyperchloremic acidosis, if recognized at the subclinical level, has required little treatment and the patients have done quite well on simple therapeutic measures. An early progressive hydronephrosis which may subsequently lead to death of a kidney can and must be corrected by reimplantation. Repeated bouts of pyelonephritis, with apparently good upper tract drainage following uretero-sigmoidostomy, call for diversion of the fecal stream by iliac colostomy if ultimate renal destruction is to be avoided. The widespread condemnation of ureterosigmoidostomy is not justified in view of present knowledge and past experience. This method of diversion is still the most satisfactory in many cases. Cutaneous ureterostomy is attended with just as much upper tract morbidity as is ureterosigmoidostomy.

It should be remembered that, although it cannot be expected that normal upper urinary tracts or normal longevity in the average patient in whom urinary diversion is accomplished by ureterosigmoidostomy or ileal segment bladder substitution with a carefully performed operation and proper long-term management, a satisfactory result may be anticipated. There is great room for improvement in surgical management of carcinoma of the urinary bladder. This phase of management has lagged far behind the advances made in recent years in the field of urinary diversion. (Cordonnier, J. J., Urinary Diversion: Arch. Surg., 71: 818-826, December 1955)

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Treatment of Bacterial Pneumonia

Despite a marked decline in the mortality rate, bacterial pneumonia remains a common and serious problem. This review emphasizes the importance of an early accurate bacteriological diagnosis and prompt

administration of the proper chemotherapeutic agents. Superinfections are of growing importance both with Gram-positive and with Gram-negative bacteria, and accurately performed antibiotic sensitivity tests are a valuable aid in guiding therapy.

Most forms of bacterial pneumonia can be treated successfully at the present time. As a result, the mortality rate has declined from over 30% to less than 10% during the past two decades. However, deaths still occur frequently among small infants, in elderly persons, and in patients in whom treatment is not instituted early. Widespread use of antibiotics may have caused some reduction in the total incidence, but the number of cases of bacterial pneumonia has not declined in proportion to the striking decline in the mortality rate. Viral infections of the respiratory tract and other inciting factors which predispose to pneumonia have not been controlled.

In most instances, treatment must be started before a precise bacteriological diagnosis is made. It is usually possible to conclude that the patient has a bacterial rather than a viral pneumonia because of the sudden onset, pleuritic pain, and rusty sputum. There is usually leucocytosis, although in alcoholics the white blood cell count is often normal or even low. Over 90% of bacterial pneumonias are caused by the *Pneumococcus*, and administration of therapy appropriate for this organism will, therefore, be adequate for most cases. However, because some of the more highly fatal forms of pneumonia are caused by other bacteria, it is important to attempt to establish a diagnosis when the patient is first seen. In addition to the clinical findings, examination of a Gram-stained smear of freshly obtained sputum is often a valuable aid in selection of the proper therapy. Of particular importance is the differentiation as to whether the predominant organism in the sputum is a Gram-positive coccus or a Gram-negative rod. Of the Gram-positive organisms, staphylococci are easily recognized but pneumococci and streptococci may be difficult to differentiate. Among the Gram-negatives, *Klebsiella pneumoniae* (Friedlander's bacillus) is easily identified by its large capsules. Other Gram-negative rods which may cause pneumonia are *Hemophilus influenzae*, *Escherichia coli*, and *Pasturella tularensis*. Antibiotic therapy is instituted on the basis of the clinical picture and the information obtained from the direct sputum smear. Specimens for blood culture and sputum culture should always be obtained before drug therapy is started. The next day, when the results of these cultures are available, it is sometimes necessary to change the therapy.

Penicillin is unquestionably the most effective drug for the treatment of pneumococcal pneumonia, even though its superiority is difficult to demonstrate in the average case. For most cases, 600,000 units of procaine penicillin should be administered intramuscularly twice daily. After the patient is afebrile, the dose may be decreased to 300,000 units once

or twice daily. The total duration of therapy is usually 5 to 7 days in the uncomplicated case; giving penicillin for a longer time does not hasten regression of the pulmonary infiltrations.

Although effective in milder cases, oral penicillin probably has little place in the treatment of pneumococcal pneumonia because large doses must be given and absorption is quite irregular. If the oral route is employed, at least 400,000 units should be given every 6 or 8 hours, and the drug should be ingested at least an hour before or 2 hours after meals. Particularly in patients with severe infections, it is preferable to administer penicillin parenterally where the pattern of absorption is much more constant.

Except in patients with overwhelming infections, the tetracycline antibiotics produce therapeutic results which are indistinguishable from those obtained with penicillin. Tetracyclines are often administered empirically because of the possibility that the patient may be suffering from pneumonia due to a Gram-negative organism or possibly to a virus which will respond to these drugs.

Erythromycin is also an excellent antibiotic for the treatment of pneumococcal pneumonia, and it gives results comparable to those obtained with penicillin in all except the severest cases.

Sulfonamides have been used successfully in the treatment of many patients with pneumococcal pneumonia. It has been clearly demonstrated, however, that the mortality rate is considerably higher with sulfonamides than with antibiotics in patients who have severe infection. Sulfonamides cannot, therefore, be recommended except when antibiotics are not available.

With the decline in streptococcal infections in general, this form of pneumonia is rare at the present time. Most cases are secondary to viral infections such as influenza or measles or follow a streptococcal sore throat. The presence of pneumonia may be obscured by the associated illness, thereby causing a delay in starting therapy. The frequent occurrence in respiratory secretions of betahemolytic streptococci complicates bacteriological studies, but the presence of large numbers of these organisms in cultures of freshly obtained sputum makes the diagnosis quite certain. Blood cultures are infrequently positive. The treatment of pneumonia caused by Group A streptococci is the same as that described for pneumococcal pneumonia. Pleural involvement is common. The fluid is often sterile and can be managed by repeated aspirations. When infected, the pleural fluid tends to be thin and hemorrhagic; the intrapleural installation of penicillin is an important part of the therapy.

Staphylococcal pneumonias have in the past been rare except in association with epidemics of measles or influenza. At present, an increasing number of cases is being encountered in which the infection is

hospital-acquired and is caused by antibiotic-resistant staphylococci. Such pneumonias occur commonly in patients who are receiving antibiotics, chiefly penicillin or one of the tetracyclines, either for treatment or for prophylaxis. Suppression of the susceptible bacterial flora allows pathogenic staphylococci, which are widespread in the hospital environment and are resistant to antibiotics the patient is receiving, to invade the host's tissues. In patients with staphylococcal infections elsewhere in the body, the organisms may reach the lungs through the blood stream. Tissue necrosis, with the formation of multiple lung abscesses, is a characteristic feature of staphylococcal pneumonia and contributes to the serious nature of the infection. Diagnosis may be difficult, but it can usually be established by obtaining a relatively pure culture of staphylococci in the sputum, particularly when this is present in several successive specimens. Blood cultures are positive in a high percentage of the severer cases and often help to establish the diagnosis when the results of sputum cultures are doubtful.

Penicillin may be started in the doses indicated below, but should not be the only antibiotic given if it is likely that the organism is penicillin-resistant. Erythromycin, chloramphenicol, or preferably both, should be administered in doses of 2 to 4 gm. daily. Advantages of giving both are a probable enhancement of the therapeutic effect and a delay in the emergence of organisms resistant to either antibiotic. Seriously ill patients with positive blood cultures should also receive bacitracin intramuscularly in doses of 15,000 to 25,000 units every 6 hours. This antibiotic should be used cautiously because it causes renal damage in some patients, but nephrotoxicity is rarely a problem if renal function is good when treatment is started.

Klebsiella (Friedlander) pneumonia occurs mostly in persons over 40 years of age who are chronic alcoholics or who have some other debilitating disease. Despite the susceptibility of *K. pneumoniae* to a number of antibiotics, the mortality rate remains over 50% because of the fulminating character of the infection and the fact that many patients are not treated until late in the course of the disease. The sputum is characteristically brick-red, sticky, and gelatinous, and stained smears reveal large numbers of Gram-positive bacilli with large capsules. Cultures reveal a heavy growth of shiny mucoid colonies. X-rays show massive consolidation of the involved lobes. Tissue necrosis occurs rapidly, leading to abscess formation.

Therapy should be started immediately with one of the tetracyclines or chloramphenicol, in doses of 3 or 4 gm. daily. In patients too ill to take oral medications, one of these antibiotics should be given intravenously in doses of 0.5 to 1 gm. every 8 to 12 hours. Streptomycin should also be given in doses of 2 to 4 gm. daily (0.5 to 1 gm. intramuscularly every 6

hours). Sulfonamides have been used extensively in the past, but they probably add little to the therapy when antibiotics are given in adequate dosage.

Not infrequently in children, and occasionally in adults, H. influenzae is the cause of pneumonia. Children should receive chloramphenicol or a tetracycline, 50 to 100 mg. per kilogram of body weight per day; 2 to 4 gm. is the usual daily dose for adults. In severe infections, streptomycin should be given in addition.

P. tularensis is rarely a primary cause of pneumonia, and the secondary form can usually be diagnosed by an adequate history and by the presence of lesions of tularemia elsewhere in the body. Treatment is the same as for Klebsiella pneumoniae.

Certain of the enteric Gram-negative bacilli, chiefly the coliforms, Pseudomonas, and Proteus, are increasingly important as a cause of superinfections and frequently involve the lungs. Treatment of pneumonia due to coliform bacteria is the same as for Klebsiella pneumoniae. However, sensitivity tests should be performed because many of these organisms are now resistant to various antibiotics. Proteus infections are difficult to treat but are most likely to respond to sulfonamides, streptomycin, tetracyclines, or chloramphenicol. Patients with systemic infections due to Pseudomonas aeruginosa should receive polymyxin B intramuscularly in doses of 50 mg. every 8 to 12 hours. A tetracycline should be administered in addition to polymyxin, because the two appear to have a synergistic action against Pseudomonas. In general, infections with these enteric bacilli respond poorly to therapy and the mortality rate is high. (Kirby, W.M.M., Treatment of Bacterial Pneumonia: Arch.Int.Med., 96: 809-816, December 1955)

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Roentgenologic Manifestations of Synovial Sarcoma

Synovial sarcomas are unique and relatively rare malignant neoplasms frequently arising near, but not necessarily from, the synovium of joint capsules, bursae, or tendon sheaths. This article presents the clinical and roentgenologic findings in 24 cases of this tumor observed at the Mayo Clinic.

The average age of the patients was 31.5 years, approximately two-thirds being between 15 and 40 years of age. Sixteen were males and 8 were females. The most common primary complaint was a palpable mass with or without pain. Only 2 patients did not mention a mass or swelling and 5 patients noted only swelling. About half of the patients complained of pain when first seen at the Clinic.

The tumors had been present 18 months or less in 17 of the cases, although in 4 cases, a tumor had been noted more than 10 years before the patient chose to investigate it. In such instances, an increase in size usually brought the patient in for consultation. One tumor was found just anterior to the sacrum, 10 involved the upper extremity, and 13 were in the lower extremity. Tumors in the region of the hip, knee, foot, elbow, and hand were most frequent. Eight patients associated injury with the discovery of the tumor.

The clinical findings in this series of patients correspond rather closely with those in previous studies. Symptoms are difficult to evaluate and do not often aid in the diagnosis. Trauma is probably of no significance as an etiologic factor, although it is rather common for patients to become aware of the tumor for the first time after some incidental injury. Such neoplasms may have been present for a long time in occasional cases, but more commonly they have been recognized for 2 years or less prior to consultation. This finding differs somewhat from the observations of others, but is supported by Tillotson, McDonald, and Janes in their review of 222 cases of synovial sarcoma.

Until recently, few articles have emphasized the roentgenologic manifestations of these neoplasms. The presence of a rounded or lobulated soft-tissue mass near a joint, which may or may not contain calcium, has been described in synovial sarcoma by various authors.

The roentgenographic appearance was normal in 3 of the 24 cases in this study. In the 3 cases, the lesions—2 in the knee and 1 in the hand—were recurrent. Two of the lesions were found on pathologic examination, while 1 was discovered on clinical observation.

Of the remaining 21 patients, 18 had a soft-tissue mass of homogeneous density, usually located near the joint of a limb. Ten of these tumors presented sharp, discrete borders, and 3 were somewhat lobulated. The remaining 8 showed irregularity and were not as clearly separate from the normal soft tissues. Ten tumors contained calcium, and in all but 1 instance the deposits were relatively large and irregular. Eight of the lesions produced destruction of contiguous bone. The tumors varied from 2 to 20 cm. in their greatest diameter. There was no evidence of joint effusion or periosteal proliferation in any of these cases. The incidence of calcification within the tumor and of bone invasion supports the findings of others but differs from those of Sherman and Chu who noted calcification in only 3, and of bone invasion in 4 of 32 cases studied. These authors also noted no significant differences in the roentgenographic manifestations of primary and recurrent synovial sarcomas.

It appears that untreated tumors are more likely to produce a discrete soft-tissue density than are recurrent lesions. The incidence of calcification and bone invasion was no greater in recurrent than in untreated

synovial sarcoma in this study. Recurrent lesions may tend to be slightly smaller than the primary lesion, but this is of little diagnostic value. For practical purposes, the roentgenographic findings in primary and recurrent synovial sarcomas are similar.

Roentgenograms in 30 cases of pathologically proved malignant soft-tissue tumor were reviewed for comparison with the findings in synovial sarcoma. Some significant differences were found. The average age in this group was 47 years. A soft-tissue mass was present in two-thirds of the cases and in almost all instances tumor margins were not sharply separated from the soft tissues. In most cases, the density of the mass was not as homogeneous as in synovial sarcoma. Calcification within the tumor and bone destruction were infrequent. In Sullivan's review of 107 fibrosarcomas, involving the soft tissues of the extremities, he found only 5 cases in which multiple small calcific areas were present. Twenty of the tumors in these 30 cases were found between the buttock and the knee. Almost all of these differences would be of value in distinguishing fibrosarcomas from synovial sarcomas. Liposarcomas are usually massive tumors and characteristically contain droplets of radiolucent fat which give them an irregular density.

In many cases, the diagnosis of synovial sarcoma can be suggested by study of the preoperative roentgenogram. Their roentgenologic diagnosis is suggested by the presence of (1) a homogeneous soft-tissue mass near a joint (this mass usually has sharp borders and is occasionally lobulated); (2) irregular calcification within the tumor (in more than one-third of the cases); and (3) secondary invasion of contiguous bone (in approximately one-third of the cases). (Craig, R.M., Pugh, D.G., Soule, E.H., The Roentgenologic Manifestations of Synovial Sarcoma: Radiology, 65: 837-845, December 1955)

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Colorado State Board Dental Licenses

The Secretary of the Colorado State Board of Dental Examiners has advised the Bureau of Medicine and Surgery that the dental law of that state requires annual registration by 1 January. The law further provides that failure to pay the annual registration fee by 1 March "shall automatically suspend the right of any licentiate to practice dentistry it, and the name of any delinquent licentiate shall be omitted from the published list. If any licentiate fails for three consecutive years to pay the annual registration fee, it shall be the duty of the Board to give notice to cancel his license subject to reinstatement." "Inactive" dentists on active duty who hold licenses in Colorado which they desire

to keep should send for registration blanks to: Jess M. Peabody, D.D.S., Secretary-Treasurer, Colorado State Board of Dental Examiners, 724 Republic Bldg., Denver, Colo. (DentDiv, BuMed)

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Training Course in Special Weapons, Isotopes,
and Military Medicine

The fifth annual course, "Special Weapons, Isotopes, and Military Medicine," will be presented by the Commandant, Twelfth Naval District, and sponsored by the Inspector, Naval Medical Activities, Pacific Coast, during the period 27 February through 2 March 1956, at Building 2, U.S. Naval Reserve Training Center, Treasure Island, San Francisco, Calif.

This course is conducted primarily for the purpose of providing Reserve Medical Department officers of the Armed Forces an up-to-date review of problems and information relating to the various medical aspects of special weapons and radioactive isotopes, with primary emphasis on their application to military medicine and dentistry, and civil defense. A special effort has been made to present subjects and speakers at this course which are different from previous years, which should make the course more interesting and worthwhile for those who attended previous courses.

Eligible Reserve officers may receive retirement point credits for attending on the basis of one (1) point for each day of attendance. Those desiring point credit for attendance must obtain authority and active duty training orders to assure accreditation. Officers who hold appropriate duty with pay orders may receive pay as well as retirement points for attending the course. In addition, allotted funds are available to pay approximately seventy-five (75) persons (with the rank of Lieutenant Commander and below) who are not in pay status. Others in non-pay status may attend and receive retirement credit.

All Reserve Medical Department officers who are on the active status list, and who have not performed more than nine (9) days active duty for training since 1 July 1955, are eligible to attend this course with accreditation of points and pay within limits of established quota. All others are invited to attend without pay or retirement point accreditation.

(DMO, 12thND)

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From the Note Book

1. The Surgeon General of the Navy commended the Commanding Officer and Staff of the U. S. Naval Hospital, Guam, M. I. for the outstanding manner in which the hospital has progressed since its dedication a year ago. The letter of commendation stated in part ". . . . the high degree of medical and surgical standards which are being upheld and carried out has placed the Naval Hospital, Guam, in a most enviable position throughout the Pacific area. This has been attested to by many military and civilian officials, both lay and professional, who have had the good fortune to visit your newly constructed and developed medical facility. The excellent relations which have been established between the naval hospital and other naval activities, civilian authorities and other agencies, and the surrounding community, reflects outstanding initiative and leadership."

Captain H. A. Gross, MC USN, is the Commanding Officer of the Naval Hospital, Guam. (TIO, BuMed)

2. Rear Admiral I. L. V. Norman, MC USN, Assistant Chief for Personnel and Professional Operations in the Bureau of Medicine and Surgery, accompanied Dr. E. H. Cushing of the Office of the Assistant Secretary of Defense (Health and Medical) on a visit to medical installations in the Pacific. The itinerary includes Hawaii; Japan; Okinawa; Korea; Formosa; Saigon; the Philippines; and Guam. (TIO, BuMed)

3. An exhibit entitled "Systematized Histopathology," sponsored by the U. S. Naval Hospital, San Diego, Calif., again was given high recognition at the annual meeting of the American Academy of Dermatology which was held in Chicago in early December. The exhibit, prepared and demonstrated by Captain J. H. Lockwood, MC USN, and Doctor W. R. Nickel, was a continuation of their exhibit which last year won top honors. (TIO, BuMed)

4. A residency training program in General Practice at the U. S. Naval Hospital, Oakland, Calif., has been approved for establishment. (TIO, BuMed)

5. Ensign 1995 (Dental) Program. This is a program whereby undergraduate dental students may be appointed Ensigns in the Naval Reserve in return for an agreement to serve on active duty as a dental officer for at least 2 years after graduation. The program has been so successful that the quotas for students to be graduated in 1956 and 1957 have been filled. It is further expected that the quota for students to be graduated in 1958 will be filled in the near future. The quota of dental students that can be commissioned

as ensigns is set by the number of dental students the Navy expects to be able to bring to active duty as dental officers at the time each year's class is graduated. (TIO, BuMed)

6. LT COL W.R. Cunningham, Royal Canadian Dental Corps, was recently awarded a certificate for satisfactory completion of a postgraduate course in operative and crown and bridge procedures by the Commanding Officer, U.S. Naval Dental School, NNMC, Bethesda, Md. (TIO, BuMed)

7. Eleven research grants totaling \$401,960 for studies to aid in the improvement of hospital services have been announced. The grants were recommended by the Federal Hospital Council. (PHS, HEW)

8. An improved instrument that registers bodily events during heart surgery—and can aid surgeons and anesthesiologists in all operations—has been announced by National Heart Institute scientists. (PHS, HEW)

9. Chlorpromazine, a valuable sedative which has profoundly influenced the treatment of mental illness, is converted in the body into a substance which new research evidence indicates may be even more valuable.

The new chlorpromazine derivative is known as chlorpromazine sulfoxide. It appears in the urine of men and animals following the administration of chlorpromazine and it seems, from preliminary animal experiments, to exert the same sort of tranquilizing effects that have made the parent drug so valuable in the treatment of excited mental states. What is more important—it seems to lack at least one of the undesirable side effects of the parent compound. (PHS, HEW)

10. The report of a normal chest film in an adult with respiratory symptoms of cough, expectoration, hemoptysis, or wheezing should be followed by further investigation with bronchography, bronchoscopy, biopsy, and cell studies of bronchial secretions. A normal chest film cannot be considered an absolute proof of the absence of bronchogenic carcinoma. (Radiology: December 1955; J. A. Zizmor, M.D.)

11. A series of 22 fatal cases and 6 surviving cases of cardiovascular collapse in acute poliomyelitis is reported in *Circulation*, December 1955; J. A. Hildes, M.D., A. Schaberg, M.D., A. J. W. Alcock, M.D.

12. Four mechanisms are usually responsible for pain, these are: (1) inflammation which stimulates the nerve endings and causes pain; (2) traction; (3) compression such as occurs in neoplasia; (4) distention such as distention of the bladder and bowel obstruction. (Postgrad. Med., December 1955; J. P. Evans, M.D.)

Recent Research ProjectsNaval Medical Research Institute, NNMC, Bethesda, Md.

1. Elementary Processes in Muscle Action: An Examination of Current Concepts. Lecture and Review Series. No. 55-3, 9 June 1955.
2. Serologic Reactions in Schistosoma Mansoni Infections. II. Cercarial Behavior in Electrophoretically Separated Fractions of Sera of Infected and Uninfected Mice. NM 005 048.02.33, 12 July 1955.
3. Laboratory Studies of Monkeys with and without Shigella Infection. NM 005 048.04, 4 August 1955.
4. Theory of the Primary Event in Muscle Action. Lecture and Review Series No. 55-5. 12 August 1955.
5. The Enthalpy Change on Adenosine Triphosphate Hydrolysis. NM 000 018.11.07, 12 August 1955.
6. Automatic Computation of Nerve Excitation. NM 000 018.03.03, 12 August 1955.
7. Characteristics and Potentials of Long-Term Cultures of Human Skin. NM 007 081.10.11, 15 August 1955.
8. The Effect of Chlorpromazine on Pituitary ACTH Secretion in the Dog. NM 007 081.22.04, 16 August 1955.
9. The Study of Frozen Specimens, Ice Crystals and Ice Crystal Growth by Electron Microscopy. NM 000 018.01.09, 16 August 1955.
10. Nature of the Acetylcholinesterase Surface. IV. The Control of Enzymatic Inhibition by Basicity in the Substituted Ethylene Diamines. NM 000 018. 06.41, 18 August 1955.
11. Body Fluids in Hypertension and Mild Heart Failure. NM 007 081. 16.04, 13 September 1955.
12. Field Trial of Shigella Flexneri 3 Vaccine VIII. Observed and Reported Reactions to the Vaccine. NM 005 048.04.22, 13 September 1955.
13. Long-Term Observations of Radiation Changes in Salivary Glands and the General Effects of 1000 r to 1750 r of X-Ray Radiation Locally Administered to the Heads of Dogs. NM 006 012.04.74, 21 September 1955.
14. Effect of Reserpine of Adrenocortical Function in Unanesthetized Dogs. Memorandum Report 55-5 related to NM 007 071.22, 12 October '55.
15. Review of Research on Filariasis in Malaya. Lecture and Review Series. No. 55-7, 25 October 1955.

Naval Dental School, NNMC, Bethesda, Md.

1. Dental Research - Current and Future. Lecture and Review Series No. 55-6, 24 August 1955.
2. Fabrication of a Training Aid for Teaching Needle Insertion Techniques, Especially Venipuncture. NM 008 015.02.01, 1 September 1955.

Naval Medical Research Unit No. 3, Cairo, Egypt

1. Observations on the Biology of *Ornithodoros D. Delanoei* Roubaud and Colas-Belcour, 1931 (Ixodoidea, Argasidae), NM 005 050.29.25.
2. Studies on Mulluscicidal Action. II. The Inhibition of Snail Succinoxidase by Some Potent Molluscicides. NM 005 050.55.02.
3. A Survey of Oral Conditions, Qalyub Project, Egypt. NM 005 050.56.01.
4. Studies on the Biology of the Relapsing Fever Spirochete, *Borrelia Persica*, recovered from the Argasid Tick, *Ornithodoros Tholozani*, Collected in the Western Desert Governorate, Egypt. NM 005 050.29.26.
5. Effect of Coupling of Homologous Serum on the Excretion and Retention of Polyvinylpyrrolidone in Dogs. NM 007 082.33.01.

Naval Medical Research Unit No. 4, Great Lakes, Ill.

1. Growth Characteristics and Cytopathogenic Effects of Influenza A and B in Cultures of Human Embryo Tissues. NM 005 051.24.04, 1 November 1955.

Naval Medical Field Research Laboratory, Camp Lejeune, N. C.

1. Effect of Sodium Pentobarbital upon the Hematocrit, Leukocyte Count and Rectal Temperature of the Normal and Splenectomized Dog. NM 006 014.04.03, November 1955.
2. Hemodynamic Response of the Burned Dog to Intravenous Infusions. NM 006 014.04.04, November 1955.
3. Shower Unit Kit for Use with Field Water Trailer. NM 007 083.03, December 1955.

Naval Medical Research Laboratory, Submarine Base, New London, Conn.

1. Brightness Thresholds as a Function of Target Contrast and Retinal Position. Report No. 266. NM 002 014.09.04, 11 July 1955.
2. A Hypothetical Basis for Quantitative Scoring of the Navy Thematic Apperception Test (N-TAT). Report No. 267. NM 003 041.54.02, 18 July 1955.

Naval Air Material Center, Aero Medical Equipment Laboratory, Phila, Pa.

1. Suitability of a Rebound Test Tower for Use in the Physical Evaluation of Aviators' Protective Helmets. TED NAD AE 5209.3, 23 September 1955.

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BUMED INSTRUCTION 6230.9

13 December 1955

From: Chief, Bureau of Medicine and Surgery
To: All Stations Having Medical Corps Personnel Regularly
Assigned

Subj: Special reporting in connection with National Poliomyelitis
Surveillance Program

Ref: (a) BuMedInst 6200.1 of 20 May 1953, Subj: Joint utilization
of certain Armed Forces medical laboratory facilities

Encl: (1) Copy telegram from Chief, Bureau of States Services,
U. S. Public Health Service, Department of Health,
Education, and Welfare, to each Regional Medical Director
of the Public Health Service, dated 30 April 1955

This instruction promulgates instructions for the special reporting of
poliomyelitis cases.

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BUMED NOTICE 6820

20 December 1955

From: Chief, Bureau of Medicine and Surgery
To: All Naval Hospitals and Activities Having Station Hospitals

Subj: Book recommended

Ref: (a) BuMedInst 6820.4B, Subj: Medical and dental professional
and technical books; procurement of

This notice invites attention to a book recommended by the Professional
Division of the Bureau of Medicine and Surgery for procurement for
medical libraries of addressees. "Synopsis of Audiology," edited by
William M. Fitzhugh, Jr., M. D., C. M., D. Sc. (Med).
Distributed by J. W. Stacey, Inc., 551 Market St., San Francisco, Calif.
Price \$2.50.

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The printing of this publication has been approved by the Director
of the Bureau of the Budget, 16 May 1955.

BUMED NOTICE 6320

22 December 1955

From: Chief, Bureau of Medicine and Surgery
To: All Hospitals, Continental U.S. Naval Activities Having a
Station Hospital or Dispensary, and All Extracontinental
Naval Activities Having Medical Corps Personnel Regularly
Assigned

Subj: CH-1 to BuMed Instruction 6320.8B, Subj: Beds and Patients
Report (DD Form 443); reporting requirements for

Ref: (a) BuMedInst 11110.1 of 3 Oct 1955, Subj: Fixed medical
treatment facilities; classification, nomenclature, definition,
and redesignation of

Encl: (1) Replacement pages 1 and 2 of BuMedInst.6320.8B

This notice changes submission requirements for and expedites trans-
mission of Beds and Patients Report (DD Form 443) by revising pages
1 and 2 of BuMedInst. 6320.8B.)

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BUMED INSTRUCTION 6440.1

27 December 1955

From: Chief, Bureau of Medicine and Surgery
To: Distribution List

Subj: Surgical Teams, Augmented (Code MIA components of the passive
defense organization); designation, organization, and administra-
tion of

Ref: (a) OpNavInst 3440.6 of 26 May 1955, as revised, Subj:
United States Navy Passive Defense Manual (NOTAL)

This instruction designates naval hospitals responsible for sponsorship
of Surgical Teams, Augmented (Code MIA components of the passive
defense organization), in accordance with reference (a); and provides
detailed guidance relative to the organization and administration of
such teams.

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MEDICAL RESERVE SECTION

Valuable Training Available Through Nonpay Medical Companies

Located throughout the United States are some 56 nonpay Medical Companies, each conducting a minimum of 24 drills annually and providing a means for all interested Medical, Medical Service, Nurse, and Hospital Corps personnel to train in the latest professional advances of military medicine developed by the Medical Departments of the Armed Services.

In addition to earning valuable point credits, both for retirement and eligibility for promotion, the Medical Department Reservist who actively participates as a member of a Medical Company earns an allowance to maintain his uniforms; he may or may not avail himself of the several pay billets authorized for the unit and he is entitled to 14 days active duty for training each year.

Nonpay Medical Companies are located in the following cities within the respective Naval Districts. Membership is open to any interested and qualified Medical Department Reservist and detailed information regarding dates and addresses where regularly scheduled drills are held may be obtained by communicating with the Medical Reserve Program officer of your Naval District.

First Naval District

NRMC 1-1 Boston, Mass.
NRMC 1-2 Providence, R.I.
NRMC 1-3 Portland, Me.
NRMC 1-5 Worcester, Mass.
NRMC 1-5 (SU) Springfield, Mass.
NRMC 1-6 Lowell, Mass.

Third Naval District

NRMC 3-1 New Haven, Conn.
NRMC 3-2 New York, N. Y.
NRMC 3-4 St. Albans, N. Y.

Third Naval District (continued)

NRMC 3-5 Brooklyn, N. Y.
NRMC 3-6 Hartford, Conn.
NRMC 3-7 Montclair, N. J.
NRMC 3-8 Hackensack, N. J.

Fourth Naval District

NRMC 4-1 Pittsburgh, Pa.
NRMC 4-2 Philadelphia, Pa.
NRMC 4-3 Philadelphia, Pa.
NRMC 4-4 Philadelphia, Pa.
NRMC 4-7 Philadelphia, Pa.

Fourth Naval District (continued)

NRMC 4-13 Columbus, Ohio
NRMC 4-14 Cleveland, Ohio
NRMC 4-16 Cincinnati, Ohio

Fifth Naval District

NRMC 5-5 Portsmouth, Va.

Sixth Naval District

NRMC 6-2 Mountain Home, Tenn.
NRMC 6-3 Boone, N. C.
NRMC 6-4 Charleston, S. C.
NRMC 6-7 Memphis, Tenn.
NRMC 6-8 Miami, Fla.
NRMC 6-10 Atlanta, Ga.
NRMC 6-11 Memphis, Tenn.

Eighth Naval District

NRMC 8-1 Dallas, Tex.
NRMC 8-2 New Orleans, La.
NRMC 8-3 Tyler, Tex.
NRMC 8-5 New Orleans, La.

Ninth Naval District

NRMC 9-1 St. Louis, Mo.
NRMC 9-3 Indianapolis, Ind.
NRMC 9-4 Kansas City, Mo.

Ninth Naval District (continued)

NRMC 9-5 Detroit, Mich.
NRMC 9-6 Des Moines, Iowa
NRMC 9-7 Duluth, Minn.
NRMC 9-8 Cedar Rapids, Iowa
NRMC 9-9 Lincoln, Neb.
NRMC 9-14 Minneapolis, Minn.
NRMC 9-17 Milwaukee, Wis.
NRMC 9-19 Rochester, Minn.
NRMC 9-20 Chicago, Ill.
NRMC 9-21 Denver, Colo.

Eleventh Naval District

NRMC 11-1 Los Angeles, Calif.
NRMC 11-6 San Diego, Calif.

Twelfth Naval District

NRMC 12-1 Berkeley, Calif.
(Research Company)
NRMC 12-2 San Rafael, Calif.
NRMC 12-4 Oakland, Calif.
NRMC 12-5 San Francisco, Calif.
NRMC 12-6 Berkeley, Calif.

Thirteenth Naval District

NRMC 13-2 Seattle, Wash.
NRMC 13-3 Portland, Ore.

PRNC

NRMC W-1 Washington, D. C.

If your city does not have a Medical Company in existence, write or visit your Medical Reserve Program Officer and he will gladly assist you in every way possible to organize such a unit within your community.

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PREVENTIVE MEDICINE SECTION

Clinical Trials of Antirabies Serum

Even within recent years, treatment by antirabies vaccine has been shown to be powerless to prevent the fatal outcome of rabies in an appreciable proportion of patients who had been bitten in the head by rabid animals, particularly wolves. The antibodies induced in the organism by the vaccine apparently formed too slowly to counteract the development of the virus introduced by a bite close to the nerve centers. A solution to this problem, which was acute in certain countries where the risks of serious wounds were great, was urgent.

The WHO Expert Committee on Rabies began to consider this problem in 1950. It recommended the study of certain prophylactic substances which had given encouraging results in the laboratory, in particular of antirabies serum of high antibody level (hyper-immune serum). In addition, it recommended that a field trial should be undertaken as soon as conditions permitted to determine the practical value of this serum combined with vaccine in the treatment of rabies in man.

Iran was chosen as the country for the investigation. Attacks on villagers by rabid wolves were not infrequent there: between 1936 and 1949, 325 persons bitten by rabid wolves—186 of them bitten in the head—had come to the Institut Pasteur in Teheran for treatment. Often there were series of cases, as many as 40 persons having been bitten. From 1950 to 1954, however, only isolated cases occurred; and, in spite of the success of combined serum-vaccine treatment, the results were too fragmentary to enable definite conclusions to be drawn.

But, in August 1954, a rabid wolf suddenly appeared in a village in Iran and created a dramatic situation which afforded an opportunity for a conclusive experiment. Dr. M. Baltazard, Director of the Institut Pasteur of Iran (Teheran), who was in charge of this study, has given an account of it which is soon to be published.

Dr. Baltazard describes as follows the attack of the wolf:

During the night of 21-22 August 1954, at about 1 a.m., a large wolf penetrated into the sleeping village of Sahane, situated on the international route which runs from Teheran to Baghdad and Damascus. Being half-way between the towns of Hamadan and Kermanshah, Sahane is a fairly frequented stopping place, and on the night in question a dozen or so trucks and motor-buses had halted there. The drivers and passengers were sleeping either inside the inns, or outside, on account of the heat

The wolf, descending from the mountains, approached Sahane from the northeast through the orchards and vineyards where there are no houses but where, at that time of the year, the guardians who keep watch on the fruit sleep. The animal made its way south, jumping the low earth walls and spiky hedges and attacking 13 people, one after the other. Most of them were lying down, which explains why many of them were bitten in the head

This attack on people in the orchards and vineyards went on for more than two hours. Cries were heard in all directions, and in the midst of the confusion lanterns were lit and a hunt organized. In the meantime, however, the wolf had reached the village itself. One of its victims was a blind beggar who was sleeping in the street. It penetrated into the bazaar and attacked a person sleeping inside a house, the door of which had been left open. From there, the beast jumped into a courtyard and onto the terraces of the houses, which are very low, and attacked an old woman. At this point it disappeared, and it is not known whether it went first to the east, where three people were attacked, or to the west. At the end of the night it was on the main road itself to the west of Sahane . . . where the lorries and motor-buses were stationed in front of the darkened inns. The animal bit three passengers and a driver, fought with a dog, and then attacked a fruit merchant in his shop; it left the main road and passed behind the houses to the south of the village, where it attacked a traveller resting in a garden, and went on toward the south. The next victim was a policeman on his early morning rounds. By this time the wolf was exhausted and had hardly any strength left for attack. It, nevertheless, bit a group of six cows grazing in a field (three of these died of rabies, and the other three were slaughtered); its last victim was a horse on which a peasant armed with a mattock was mounted. The man jumped from his horse and killed the wolf with about ten blows of his mattock.

Emergency aid was given to the victims in the small, local hospital; and a few hours afterward, 27 persons (of the 29 bitten) were sent by truck to Teheran, which they reached within 32 hours after they had been bitten. Two others arrived later, one of them about 100 hours after being bitten.

Eleven of the victims were bitten in the trunk or limbs, and 18 in the head. The treatment of the latter and the results of the treatment are summarized in Table I

There were no deaths among those bitten in the trunk or limbs, whether they were given serum + vaccine, or vaccine alone. These results confirmed observations made during the past thirteen years at the Institut Pasteur in Teheran that treatment of persons bitten in the trunk or limbs is very effective.

Table I. Clinical and Serological Results of Treatment with Antirabies Serum and Vaccine

Series	Number of cases	Treatment *	Number of deaths from rabies	Serological observations
A	5 (4 very serious)	Serum: 1st and 5th days Vaccine: 21 days	0	Antibodies in all during first 5 days. Intermediate level maintained up to 21st day, subsequent decline up to 53rd day. One subject with high level from 21st to 53rd day
	1 (very serious) (Fig. 1)	Serum: 1st, 3rd, 5th, 7th, 9th, and 11th days Vaccine: 21 days (Penicillin treatment of secondary infection)	0	High level of antibodies during whole period of observation
B	7 (4 very serious)	Serum: 1st day Vaccine: 21 days (except in case of one who died on 16th day)	1	Antibodies during first 5 days. Low level in 4 subjects. In fatal case, traces only after 7th day
C	5 (3 very serious)	Vaccine: 21 days	3	No antibodies before 19th day. Present in 3 subjects between 21st and 25th day (1 death). No antibodies in 2 cases, 1 fatal

* Serum: rabbit serum prepared by the Lederle Laboratories, Pearl River, N. Y., USA, injected at the rate of 0.65 ml. per kg. of body-weight (maximum 50 ml) in the muscle of the buttock.
Vaccine: phenolized vaccine (sheep brain, 5%; phenol, 0.6%), 5 ml. daily by subcutaneous abdominal injection.

Of the subjects bitten in the head who received a single injection of serum, one out of seven died; the patient who was treated about 100 hours after the bite was among the survivors. There were no deaths among five serious cases which received two injections of serum. The most striking case was that of a boy six years old whose parietal bone had been smashed and the dura mater torn by the wolf's teeth, but, who in spite of this "intracranial inoculation," resisted the infection as a result of six injections of

serum combined with vaccine treatment. Examination of these cases showed that the wolf's bites remained virulent from the beginning to the end of the attack, i. e., for about four hours. The virus was isolated from the brain of the wolf.

Serological Study

The clinical study of the cases treated with either vaccine alone or vaccine + serum was supplemented by serological examinations. From the beginning of treatment up to the 53rd day, in some cases, serological samples were taken at fixed intervals and subjected to the mouse neutralization test to ascertain their antibody level. The results of these tests, carried out by Dr. K. Habel and Dr. H. Koprowski, are also to be published.

The authors sought to correlate the level of neutralizing antibodies present in the serum of the treated victims with the evolution of the disease. Table I gives a brief summary of their observations.

The results indicate clearly that, in the case of head bites, the combined administration of serum and vaccine gives more effective protection than vaccine treatment alone. In general, it appears that the passive antibodies introduced into the blood after the bite hold the infection in check until the antibodies produced by the vaccine come into action.

In discussing these results and the various biological processes involved, the authors stress a number of points. Three sources of antibodies and the interaction of a number of factors must be considered in connection with the immunological phenomena which develop from the beginning of treatment up to cure or death of the patient.

The passively administered antibodies introduced by injection of serum into the organism very quickly produce in the blood of the victim a certain level of protection, low or intermediate depending upon the potency of the serum. This protection level tends gradually to decrease with excretion and destruction of the foreign serum. Side by side with these passive antibodies, there are antigens in the blood; the vaccine inoculated with the serum, and, possibly, street virus introduced by the bite of the rabid animal. The body's defense will depend to some extent on the response to these antigens. Response to the vaccine generally appears between the 14th and 21st days in the course of vaccine treatment. The potency of the vaccine and the patient's ability to produce antibody are limiting factors which may decide the outcome. In some cases, there is hardly any reaction at all to the antigen stimulus. This was so with regard to two of the patients in series C, one of whom died, and with regard to the only fatal case in the B series.

As far as the antigen introduced by the bite is concerned, there is no way of knowing—except in fatal cases—when the bite introduces a

sufficient quantity of rabies virus for multiplication to begin, the quantity of virus produced by multiplication, or when multiplication ceases. It is probable that this antigen arouses a serological response which is as effective as, if not more effective than that produced by the vaccine.

The interplay of these various factors makes it impossible to dissociate their effects and to determine the role played by each. For example, it is not possible to distinguish, after the 21st day, the part of the antibody resulting from multiplication of the street virus.

(Chronicles of World Health Organization, 9: 308-311, November 1955)

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Certification of Specialists in Occupational Medicine

The Bureau of Medicine and Surgery is desirous of having all of its occupational medical officers, who meet the requirements, certified as specialists in occupational medicine. This would aid the Bureau in selecting qualified occupational medical officers for duty in naval industrial activities. Also, as the program for training occupational medical officers progresses in naval industrial activities, Board certified medical officers will be needed to assist in carrying out the program.

Attention is invited to the fact that certification without examination as a member of the Founder's Group closes 30 June 1956. After this date, all qualified applicants will be certified only by examination.

Details on qualification requirements and mode of applying were published in the U.S. Navy Medical News Letter, Vol. 26, No. 1, July 8, 1955, in an article entitled, "Certification of Specialists in Occupational Medicine."

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Occupational Dermatitis

A query concerns several patients who have worked with metals and have dermatitis on their hands when they come in contact with magnesium. The nature of the work and what other metals are handled are not stated. The reply states that if magnesium founding was the work in question, dermatitis might readily arise, not from the magnesium itself (apart from heat burns) but from the ammonium bifluoride or other fluorides put into the mold. In machining operations, dermatitis might arise from cutting oils. Among metals not mentioned, nickel is known to be a source of allergic dermatitis. Magnesium slivers embedded in the skin cause subcutaneous gas tumors, but otherwise cause neither contact nor allergic dermatitis. (Queries & Minor Notes: J. A. M. A., 159: 154, September 10, 1955)

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A Laboratory Evaluation of Silicone
Skin-Protective Preparations

Six commercial silicone-containing skin protectives, two silicone oils, two industrial silicone greases, white petrolatum, and ten commercial nonsilicone preparations were tested as barrier agents against a variety of challenging liquids by a laboratory method. Two of the silicone ointments and the two silicone greases were found to be very effective, but the silicone oils gave poor protection. The nonsilicone protectives were in some instances better than the commercial silicone ointments, but in overall barrier action, the two superior silicone ointments outperformed the nonsilicone ointments. White petrolatum, U.S.P. grade, was as good a barrier ointment as the best silicone and nonsilicone ointments used in the study. The materials that did not show good protective action in the laboratory tests would not be expected to give good results in clinical trials. (Denton, C.R., Birmingham, D.J., Perone, V.B., A Laboratory Evaluation of Silicone Skin-Protective Preparations: Arch. Dermat., 72: 7-12, July 1955)

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American Trypanosomiasis (Chagas' Disease)

In California, Arizona, and Texas, Triatomids (*Triatoma* bugs) have been previously demonstrated to be infected with Trypanosoma cruzi, the etiological agent of American Trypanosomiasis. Armadillos, opossums, mice, and wood rats were also shown to be naturally infected in studies done in Texas in 1939, 1941, and 1943. Human infection, acquired within the United States, had not previously been reported.

The authors report the first human case occurring in a 10-month old female living in Corpus Christi, Texas. The child was first seen by a physician for the complaint of fever (101 - 103° F.) and listlessness of 36 hours duration. On admission, the only abnormal findings were fever and 78% lymphocytes on the differential smear. The leukocyte count was 10,600 per cu. mm.

A fine macular rash was noted over the extremities and trunk on the third day of illness. A virus infection of some type was thought the most probable diagnosis and the patient was treated with tetracycline.

Ten days later, fever and irritability persisted (102° F. rectal) and slight puffiness of the eyelids was noted. A moderately enlarged nontender postauricular node was palpated. The leukocyte count was 35,330 per cu. mm. with 18% polymorphonuclears and 82% immature lymphocytes. Because leukemia was then suspected, blood smears were closely examined, revealing T. cruzi.

Tetracycline treatment was resumed and the child became afebrile in 48 hours. No complications have been reported during the 2 months that have since elapsed.

Both parents were born and had lived continuously in the United States. The mother was well; the prenatal course and delivery were normal. The family residence was in a new subdivision of the city, next to a range of mesquite and brush. Triatoma bugs had been troublesome for some months, often biting at night. The father gave a history of having several recent bites. Although the child is not known to have been bitten, triatomines were seen feeding upon a dead opossum some time prior to the child's illness. (Woody, N. C., Woody, H. B., American Trypanosomiasis (Chagas' Disease). The First Indigenous Case in the United States: J. A. M. A. 159: 676, 15 October 1955)

(Note: Since the aforementioned case of American Trypanosomiasis was reported, a second case has been reported from Houston, Texas. Diagnosed on November 17, 1955, and reported in the Department of Health, Education and Welfare, Public Health Service, National Office of Vital Statistics, Communicable Disease Summary for the Week Ended December 19, 1955, the second case was in a 6-month old male with obstructive hydrocephalus. Cerebral spinal fluid obtained by ventricular tap revealed the forms of T. cruzi. No history of bug bites was obtained, and subsequent entomological survey of the county failed to reveal any Triatoma bugs.

It is of interest that the first two reported cases of American Trypanosomiasis are in the State of Texas and were reported within 3 months of each other.)

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Tuberculosis Among Nurses

In 1930, the Relief Fund Committee of the American Nurses' Association reported that, over a 15-year period, aid had been granted to 543 nurses, of whom 258, or 47%, were suffering from tuberculosis. Many graduate nurses today call attention to the unfortunate number of their classmates who developed tuberculosis either while in school or subsequently.

Why excellent techniques were developed to protect nurses and others against such contagious diseases as typhoid fever and diphtheria, while nothing was done to protect them against tuberculosis, remains an enigma. One probable reason for this inconsistency was that nurses and physicians often were not much impressed with contagiousness in

tuberculosis because of the long interval of time that usually elapses between exposure and the development of clinical disease. The evolution of clinical lesions was not likely to be associated with the exposure of months, years, or decades before.

Although the problem was recognized as a serious one by many persons, its real magnitude was not appreciated until large numbers of entering student nurses had tuberculin administered and nonreactors were tested periodically while in school. Wherever this was done, it was usually found that an alarming number of previously uninfected girls had become infected as students of nursing. In some places, the number so infected reached 100% with corresponding morbidity and mortality. At the same time, girls of equal ages in the same community but engaged in other activities presented an exceedingly low annual infection attack rate. It was not only in sanatoriums and tuberculosis services in general hospitals, but also in many general hospitals without tuberculosis services, that a disproportionate number of students were being infected.

Ralph Kinsella, Chester Stewart, and Harold Diehl were the pioneers in instituting examination for tuberculosis of all patients being admitted to general hospitals. This pioneer work was done between 1925 and 1936. This examination of admissions together with pre-employment and periodic examinations for tuberculosis of all employees of hospitals, has well-nigh solved the problem in hospitals where these measures have been in continuous practice. Despite this well established and thoroughly proved method, to date it has been adopted by a lamentably small number of hospitals in this country.

In one school of nursing, in which, prior to 1931, 100% of the students, who were uninfected when they entered, acquired infection before graduation, only 3.2% of the 1953 class and 6.4% of the 1954 class became infected while enrolled. In the same school, before protective measures were well under way, from 12 to 19% of students developed demonstrable lesions; but since the protective measures have been in practice only four students have developed clinical tuberculosis, all of whom had been infected before entering school.

Although the tuberculin test has been the master key in the solution of the tuberculosis problem among nurses, the imperativeness of its universal use among both students and graduates should be obvious to all from two fairly recent developments: (1) Wherever tuberculosis is compensable, periodic testing with tuberculin of nonreactors enables one to place responsibility in cases that come to litigation. The place where the initial infection is allowed to occur is responsible rather than the place where the nurse is employed when demonstrable clinical disease evolves. (2) Treating recent tuberculin converters with antimicrobial drugs is rapidly gaining favor. If present or future drugs prove to be germicidal in such

minute recent lesions, for the first time in history tuberculosis may be cured in the strict sense of the word. If recent infections are not found for lack of administering the tuberculin test periodically, infected nurses may pass the time when such cure is possible because of loss of blood supply to the lesion. Even if antimicrobial drugs are not capable of destroying all tubercle bacilli in such recent lesions, there is now reasonably good evidence that they will suppress tubercle bacilli so as to prevent acute destructive forms, including meningitis and generalized miliary disease, which sometimes occur soon after tissues become sensitized from the initial invasion.

For nurses who have been infected and who, therefore, react to tuberculin before entering school, and for all graduates now infected, frequent periodic examinations, always including x-ray film inspection of the chest, will detect 95% of evolving clinical chronic pulmonary lesions while in the silent stage before they have become contagious and when treatment is so effective.

There are few projects that the American College of Chest Physicians might undertake with so much assurance of success around the world than that designed to solve the problem of tuberculosis among nurses. An efficacious method is now available and all that remains is to do the job. (Myers, J. A., Tuberculosis Among Nurses: The Hospital Counselor, No. 7, November 1955)

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Invitation to the First International Symposium on Venereal Disease

The First International Symposium on Venereal Diseases and the Treponematoses will be held at the Statler Hotel, Washington, D. C. from May 28 through June 1, 1956. This meeting, which will be jointly sponsored by the United States Public Health Service and the World Health Organization, will afford an opportunity for an international exchange of information and ideas on the latest developments in research, diagnosis, treatment, and case finding of venereal and treponemal diseases.

The Medical Corps, Medical Service Corps, Hospital Corps, and all other naval personnel concerned with venereal disease are invited not only to attend the Symposium, but also to participate in the program.

Naval personnel desiring to submit a paper for consideration by the Program Committee should send an abstract of the proposed contribution, typewritten and double-spaced, to C. A. Smith, Medical Director, Chief, Venereal Disease Program, U.S. Public Health Service, Washington 25, D.C., not later than February 1, 1956. To insure proper interpretation,

complete manuscripts of the papers selected for the program must be made available to the Program Committee by April 1, 1956, as arrangements will be made at that time for the simultaneous interpretation of the papers in English, French, and Spanish.

Articles submitted by naval personnel should be submitted via the Bureau of Medicine and Surgery and must comply with BuMed Instruction 5600.2B of 10 March 1955, and U.S. Navy Regulations, 1948, Article 1252. These articles should pertain to recent work and be of unusual interest.

All concerned naval personnel are urged to attend this symposium, if practicable, and to submit papers if they have suitable material.

Funds for travel and subsistence for personnel attending this course are not available from the Bureau of Medicine and Surgery.

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Some Aspects of Hypertension in Industry

Medical records of some 500,000 DuPont employees for a period of 13 years were studied with the object of learning, if possible, how hypertension can be detected in its incipient stages and how it can be prevented. The study revealed that employees in the New York sales office had the highest prevalence of hypertension and those of a small explosive plant, who were carefully screened, had no hypertension. It was found that the incidence of hypertension increases gradually with age after age 30 while that of heart disease shows a definite break at age 45 - 50 and was much more pronounced in 1953 than in 1940. The incidence of hypertension among these employees is lower at all ages than in several other studies that have been made. Correlation was found between hypertension and each of the following: enlarged thyroid, fundus abnormalities, cardiac enlargement, albuminuria, obesity, elevated pulse rate, high diastolic readings, arcus senilis, and heart abnormalities. No relation was evident between hypertension and smoking, drinking, allergies, streptococcic throat, renal diseases, disease problems, emotional problems, and diet. The study confirmed the fact that family history is the most important factor in predicting hypertension. Charts are presented and each of the points mentioned is discussed. A study of hypertension among executives as compared with that among all employees is described. The goal of predicting and preventing hypertension is not attained by this study, but the way is pointed to future investigations. (D'Alonzo, C.A., Proc. 7th Ann. Mtg. Am. Acad. Occ. Med.: pp. 30-41, 1955)

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Western Equine Encephalitis Virus

The North Carolina State Board of Health has reported that information was received from the Virus and Rickettsia Section, Communicable Disease Center, Public Health Service, Montgomery, Ala., that western equine encephalitis virus was isolated from a pool of 31 engorged Culex quinquefasciatus mosquitoes which were collected in North Carolina during the recent encephalitis outbreak. The isolation of western equine virus from mosquitoes represents the second isolation of this agent on the eastern seaboard, the first having been reported from New Jersey in 1954. Eastern equine virus was reported previously in horses and pheasants in North Carolina. The presence of both types of virus in the State will make investigations of the encephalitis problem there very difficult.

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